

## **ENGINEERING EXHIBIT**

### **Application for Modification of Construction Permit**

prepared for

**Manuel E. Arroyo**  
W268BW Orlando, FL  
Facility ID 156212  
Ch. 257 99.3 MHz 0.25 kW

*Manuel E. Arroyo* (“*Arroyo*”) is the permittee of the Construction Permit (“CP” BNPFT-20130327ANK) for unbuilt FM translator station W268BW, Channel 268, Fac ID 156212, Gainesville, FL. Pursuant to the procedures described in FCC 15-142 (FM translator filing window for AM licensees),<sup>1</sup> *Arroyo* herein proposes to relocate W268BW to Orlando FL, change to Channel 257, and associate the facility with station WRMQ(AM) (Class D, 1140 kHz, Fac ID 21759, Orlando FL). Accordingly, the proposal is a “250-mile window application<sup>2</sup>” and *Arroyo* certifies that a rebroadcast agreement with WRMQ has been established.

The proposed translator site is an existing tower structure associated with FCC Antenna Structure Registration (“ASR”) number 1244200. The proposed site is located 59.4 miles (95.5 km) from the authorized W268BW site and therefore complies with the filing window’s maximum relocation distance of 250 miles. The proposed transmitting antenna will be side-mounted on the tower structure and no change to the overall structure height will result from this proposal.

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<sup>1</sup>*Revitalization of the AM Radio Service*, First Report and Order, Further Notice of Proposed Rule Making, and Notice of Inquiry, FCC 15-142, released October 23, 2015.

<sup>2</sup>See Public Notices: *Media Bureau Initiates AM Revitalization Outreach Efforts; Modification Window Procedures and Requirements Announced*, DA 15-1215, released October 26, 2015; and *Media Bureau Announces Filing Dates And Procedures For AM Station Filing Window for FM Translator Modifications and Availability of FM Translator Technical Tools*, DA 15-1491, released December 23, 2015.

### **Fill-In Compliance**

W268BW will be a fill-in translator for station WRMQ(AM). The 60 dB $\mu$  contour of the proposed W268BW is encompassed by the lesser of the WRMQ daytime 2 mV/m contour and a 25 mile radius from WRMQ's transmitter site as depicted in Figure 1. As a fill-in translator, the proposed 0.25 kW ERP complies with §74.1235(a). Final signal delivery of the audio programming material to the translator will be accomplished via internet.

### **§74.1204 Interference Protection**

Table 1 supplies a summary of the proposal's compliance with the interference protection requirements of §74.1204(a) and (g). The proposed facility complies with the prohibited contour overlap requirements of 74.1204(a) regarding all other FM full power, low power, and translator stations except for one full power station, WMMO(FM) (Ch. 255C2, Orlando, FL). The proposal complies with §74.1204(d) with respect to WMMO.

The proposed W268BW interfering contour is close to the WLRQ-FM (Ch. 257C2, Cocoa, FL) and W257BF (Ch. 257, Leesburg, FL) protected contours. Figures 2, 2A, and 2B provide maps demonstrating that no prohibited contour overlap would occur, based on USGS 3 arc second digitized terrain data. Tables 2 and 3 provide companion "FM Over" computations for the protected and interfering contours at one-degree increments. These exhibits demonstrate that no prohibited contour overlap will occur with respect to WLRQ-FM or W257BF.

Regarding WMMO, as described in FCC 02-244<sup>3</sup> the "ratio" undesired-to-desired signal method of interference determination may be used by an FM translator applicant to demonstrate compliance with §74.1204(d). WMMO is on a second adjacent channel and is located 5.6 km distant from the proposed site. The WMMO signal level at the proposed translator site is 101 dB $\mu$  based on standard FCC F(50,50) propagation curves. The corresponding undesired interfering signal level is 141 dB $\mu$ .

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<sup>3</sup>*Living Way Ministries, Inc.* Memorandum Opinion and Order, Released September 9, 2002, FCC 02-244, 17 FCC Rcd 17054-60.

At the proposed ERP of 250 Watts, the translator's worst-case (free space) 141 dBμ interfering signal extends 0.01 km (10 meters). Since the antenna's height is 119 meters above ground level, the interfering signal will not reach ground level or any populated areas. An aerial view of the proposed translator site and vicinity is provided in Figure 3. The surrounding terrain is flat and there are no nearby tall buildings. Thus the proposal complies with §74.1204(d) with respect to WMMO.

### **Human Exposure to Radiofrequency Electromagnetic Field (Environmental)**

The proposed operation was evaluated for human exposure to RF energy using the procedures outlined in the Commission's OET Bulletin Number 65. Based on OET-65 equation (10), and assuming the worst-case of 100 percent relative field at downward elevations, the calculated signal density near the tower at two meters above ground level attributable to the proposed facility is  $1.2 \mu\text{W}/\text{cm}^2$ , which is 0.6 percent of the general population/uncontrolled maximum permitted exposure limit. This is below the five percent threshold limit described in §1.1307(b) regarding sites with multiple emitters, categorically excluding the applicant from responsibility for taking any corrective action in the areas where the proposal's contribution is less than five percent. When the antenna's elevation pattern is considered, the calculated RF exposure level will be even lower.

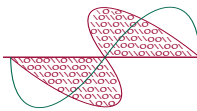
The general public will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines. RF exposure warning signs will continue to be posted. With respect to worker safety, the applicant will coordinate exposure procedures with all pertinent stations and will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from RF electromagnetic field exposure in excess of FCC guidelines. This exhibit is limited to the evaluation of exposure to RF electromagnetic field.

List of Attachments

Figure 1	Coverage Contours – Primary and Translator Stations
Figure 2, 2A, 2B	§74.1204 Compliance to WLRQ-FM and W257BF
Figure 3	Interference Protection to WMMO(FM) - Aerial View
Table 1	Channel Allocation Summary
Table 2	Contour Protection “FMOver” Report – WLRQ-FM
Table 3	Contour Protection “FMOver” Report – W257BF
Form 349	Saved Version of Engineering Sections from FCC Form at Time of Upload

**Chesapeake RF Consultants, LLC**

Joseph M. Davis, P.E.	January 28, 2016	
207 Old Dominion Road	Yorktown, VA 23692	703-650-9600

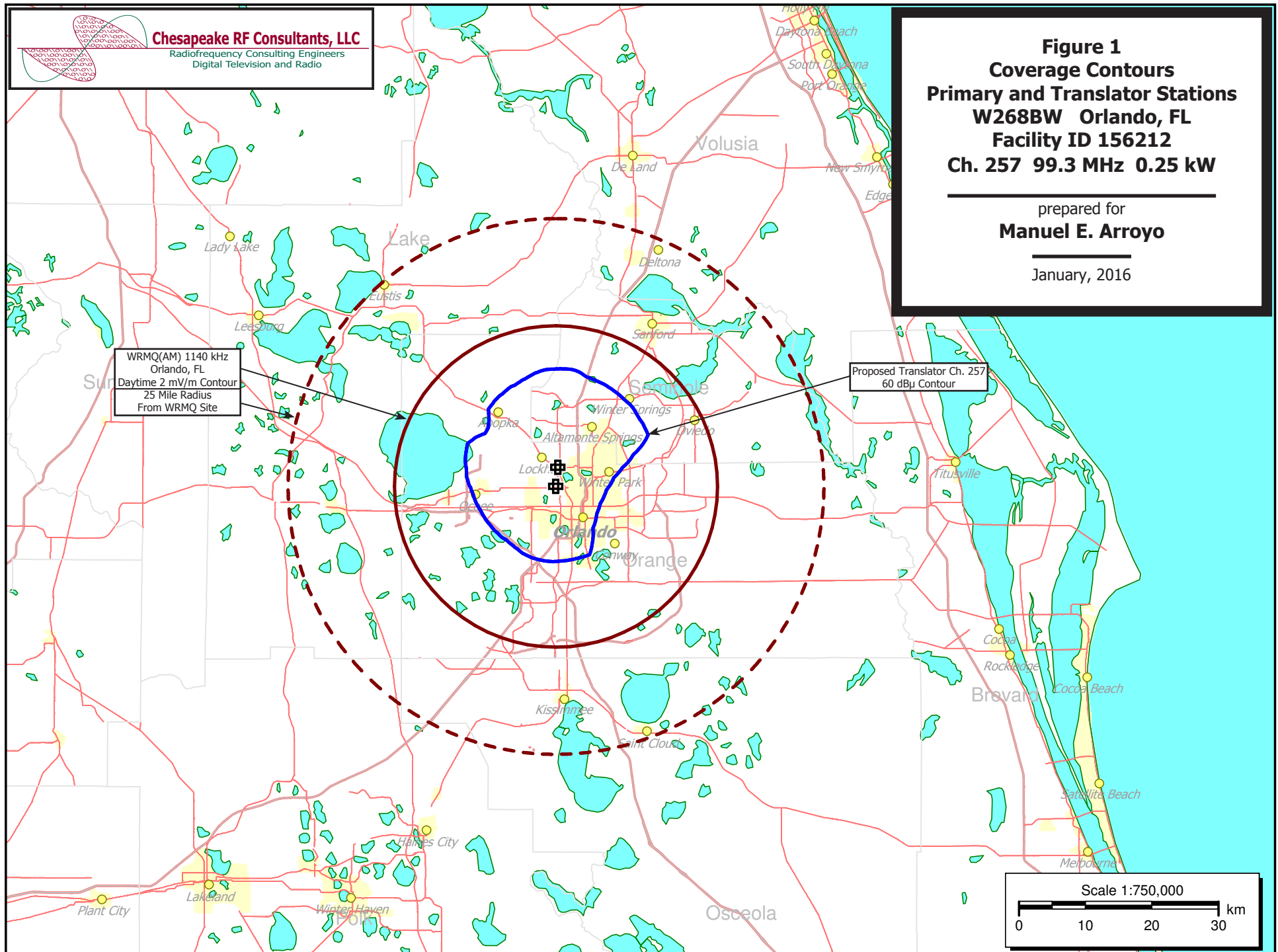


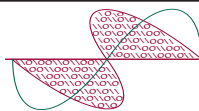
**Chesapeake RF Consultants, LLC**  
Radiofrequency Consulting Engineers  
Digital Television and Radio

**Figure 1**  
**Coverage Contours**  
**Primary and Translator Stations**  
**W268BW Orlando, FL**  
**Facility ID 156212**  
**Ch. 257 99.3 MHz 0.25 kW**

prepared for  
**Manuel E. Arroyo**

January, 2016



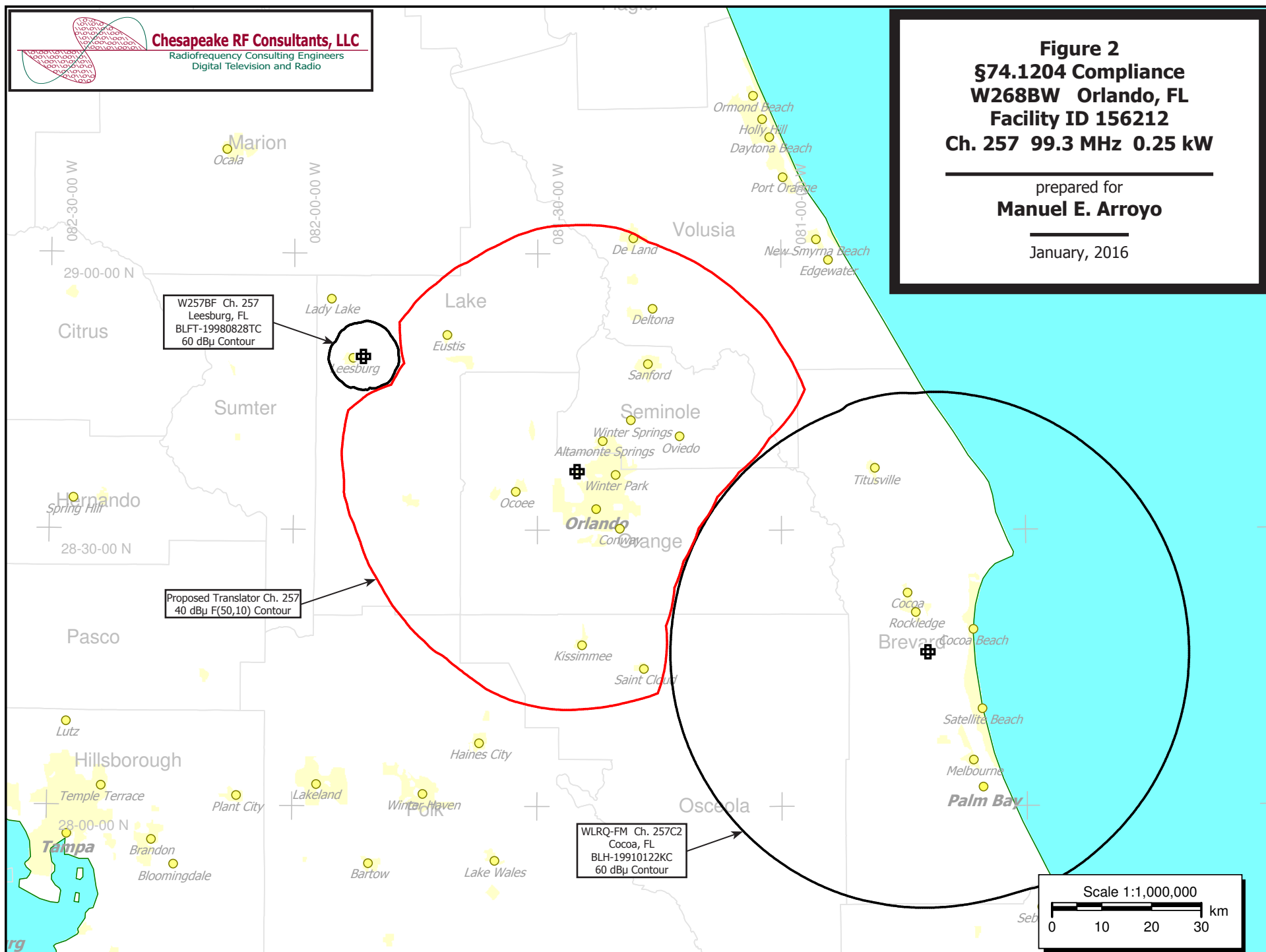


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Digital Television and Radio

**Figure 2**  
**§74.1204 Compliance**  
**W268BW Orlando, FL**  
**Facility ID 156212**  
**Ch. 257 99.3 MHz 0.25 kW**

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January, 2016



**Figure 2A - Detail**  
**§74.1204 Compliance**  
**W268BW Orlando, FL**  
**Facility ID 156212**  
**Ch. 257 99.3 MHz 0.25 kW**

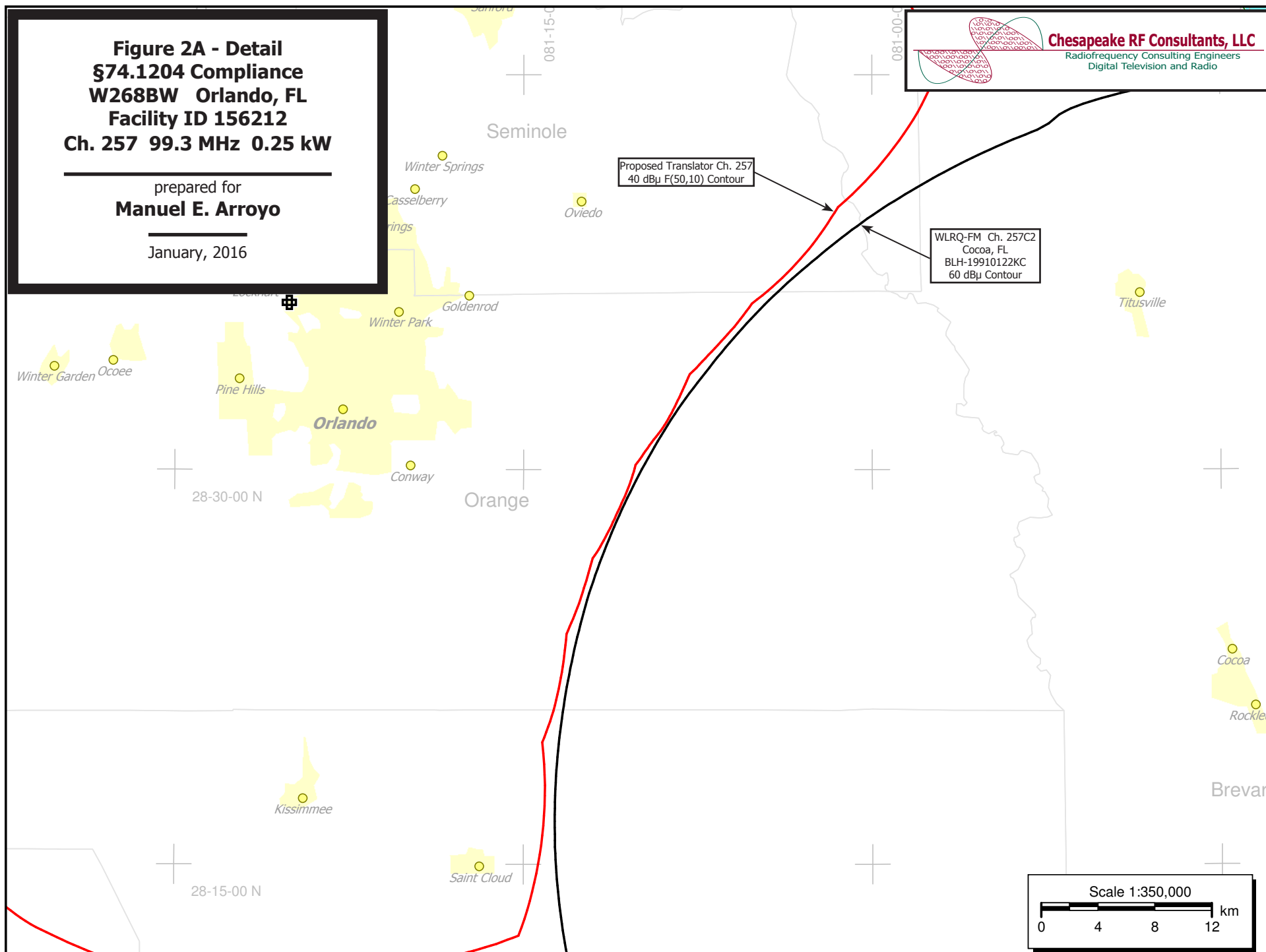
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January, 2016



Proposed Translator Ch. 257  
40 dBμ F(50,10) Contour

WLRQ-FM Ch. 257C2  
Cocoa, FL  
BLH-19910122KC  
60 dBμ Contour



**Figure 2B - Detail**  
**§74.1204 Compliance**  
**W268BW Orlando, FL**  
**Facility ID 156212**  
**Ch. 257 99.3 MHz 0.25 kW**

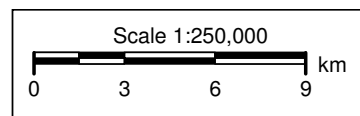
prepared for  
**Manuel E. Arroyo**

January, 2016

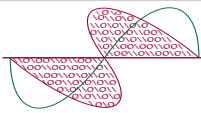


W257BF Ch. 257  
Leesburg, FL  
BLFT-19980828TC  
60 dBμ Contour

Proposed Translator Ch. 257  
40 dBμ F(50,10) Contour







**Chesapeake RF Consultants, LLC**  
Radiofrequency Consulting Engineers  
Digital Television and Radio

**Figure 3**  
**Interference Protection to WMMO(FM)**  
**Aerial View**  
**W268BW Orlando, FL**  
**Facility ID 156212**  
**Ch. 257 99.3 MHz 0.25 kW**

prepared for  
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January, 2016

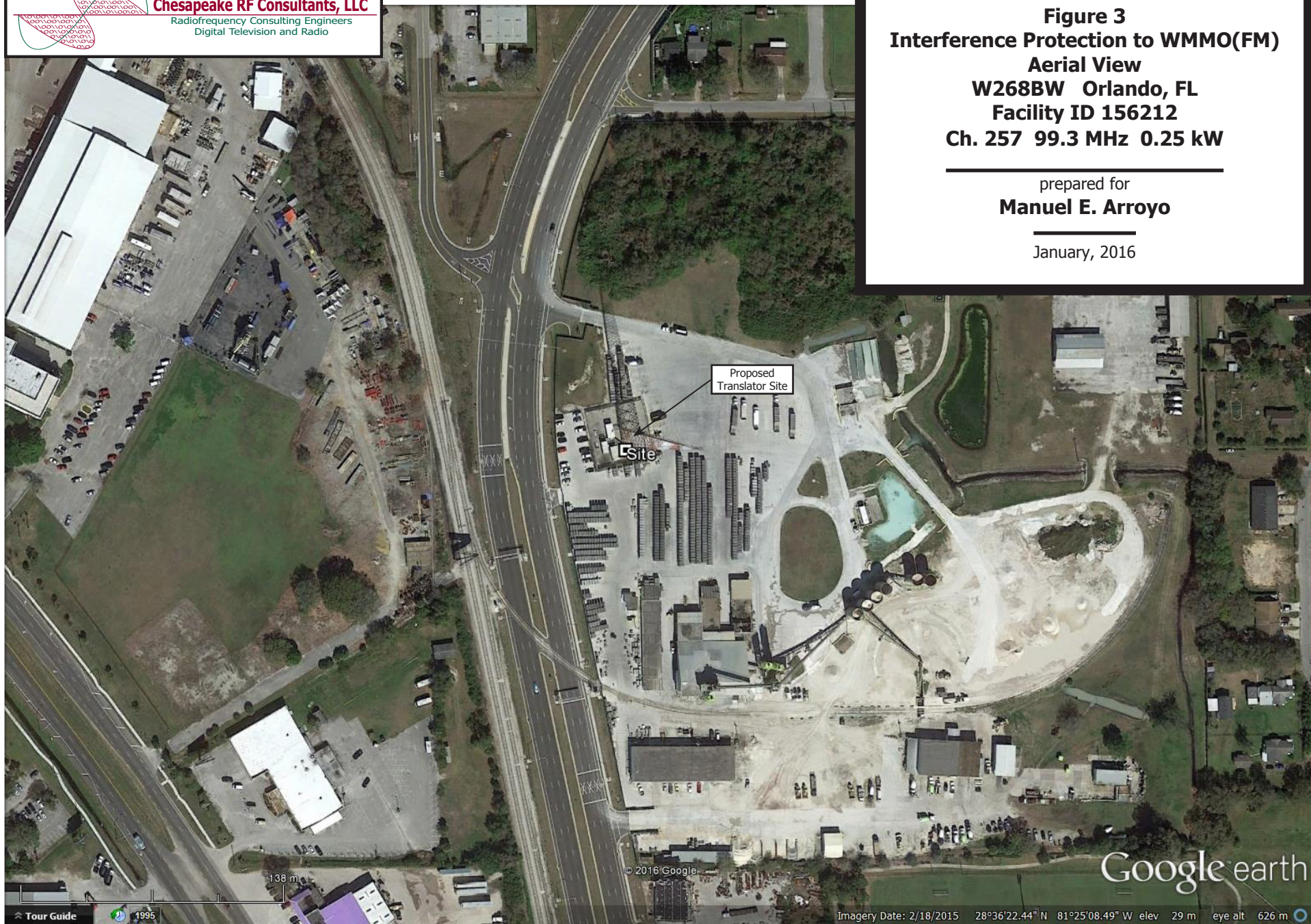


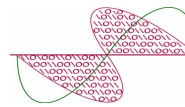


Table 1

## Channel Allocation Study Summary

Manuel E. Arroyo

W268BW Orlando, FL



Chesapeake RF Consultants, LLC

Radiofrequency Consulting Engineers  
Digital Television and Radio

Proposed W268BW											
CH# 257D - 99.3 MHz, Pwr= 0.25 kw DA, HAAT= 118.9 M, COR= 148 M											
Average Protected F(50-50)= 14.0 km											
Standard Directional											
REFERENCE	DISPLAY DATES										
28 36 20.0 N.	DATA 01-28-16										
81 25 05.0 W.	SEARCH 01-28-16										
CH	CALL	TYPE	ANT	AZI.	DIST	LAT.	Pwr(kw)	INT(km)	PRO(km)	*IN*	*OUT*
CITY		STATE		<--	FILE #	LNG.	HAAT(M)	COR(M)	LICENSEE	(Overlap in km)	
257C2	WLRQ-FM	LIC	CN	117.3	78.99	28 16 42.0	50.000	137.2	51.7	-66.3*<	0.3
Cocoa		FL		297.6	BLH19910122KC	80 42 03.0	150	151	Capstar Tx, LLC		
255C2	WMMO	LIC	C	231.4	5.58	28 34 27.0	44.000	6.0	52.6	-13.7*<	-48.1*<
Orlando		FL		51.4	BLH19991008ABG	81 27 46.0	159	188	Cox Radio, Inc.		
257D	W257BF	LIC	CN	298.4	48.66	28 48 47.0	0.055	23.4	7.0	13.2	0.5
Leesburg		FL		118.2	BLFT19980828TC	81 51 27.0	63	86	Bible Broadcasting Network		
258L1	WVGT-LP	LIC		315.8	30.06	28 47 56.7	0.100			8.3	3.6
Mount Dora		FL		135.6	BLL20150709AAW	81 38 00.1	25	53	Seminole County Community		
258C1	WQYK-FM	LIC	C	232.3	121.99	27 55 53.8	100.000	90.5	60.6	18.2	41.3
St. Petersburg		FL		51.9	BLH20100122AAS	82 24 04.6	174	181	Wdas License Limited Partn		
204C3	WMYZ	CP	DCX	278.9	31.38	28 38 56.0	7.200	23.4	7.0	11.5R	19.9M
Clermont		FL		98.8	BPED20131122AWW	81 44 09.0	113	141	Central Florida Educationa		
204A	WMYZ	LIC	CX	278.9	31.38	28 38 56.0	1.200	23.4	7.0	9.5R	21.9M
Clermont		FL		98.8	BLED20100408ABN	81 44 09.0	107	137	Central Florida Educationa		
257A	WXRA	LIC	ZCX	301.6	117.61	29 09 19.0	3.700	83.1	27.9	22.5	48.7
Inglis		FL		121.1	BLH20080630ADG	82 27 01.0	128	149	George S. Flinn, Jr.		
258A	WLOV-FM	CP	ZCX	25.5	77.76	29 14 11.0	5.700	35.2	23.4	28.3	32.8
Daytona Beach Shore		FL		205.7	BPH20150923AJT	81 04 22.0	102	107	Susan Hall		
258A	WLOV-FM	LIC	NCX	25.5	77.76	29 14 11.0	2.200	33.2	22.3	30.3	34.0
Daytona Beach Shore		FL		205.7	BLH20120409ABX	81 04 22.0	104	107	Susan Hall		
256L1	WRWS-LP	LIC		29.4	76.61	29 12 20.1	0.100			54.3	49.4
Daytona Beach		FL		209.5	BLL20080129AAH	81 01 51.6	29	32	Bethune-cookman College, I		
256C3	WVOJ	LIC	NCN	185.3	122.22	27 30 39.0	10.000	55.9	37.2	52.2	63.7
Avon Park		FL		5.2	BLH19970908KF	81 31 54.0	157	186	Cohan Radio Group, Inc.		
259A	WGMA	LIC	NC	316.9	88.13	29 10 59.1	2.000	2.4	28.7	71.9	58.3
Silver Springs Shor		FL		136.6	BLH20140318ACC	82 02 17.7	175	194	Ricardo D. Arroyo		
254D	W254AI	LIC	C	206.4	73.35	28 00 50.9	0.250	1.1	10.0	58.6	62.2
Auburndale		FL		26.2	BLFT20141024ACR	81 45 00.7		100	Radio Training Network, In		
260C3	WXJB	CP	ZCX	272.5	99.54	28 38 28.0	9.200	3.7	37.4	82.0	61.1
Homosassa		FL		92.0	BPH20130711AAH	82 26 14.0	163	181	George S. Flinn, Jr.		
256C0	WQIK-FM	LIC	CX	355.5	186.83	30 16 51.0	100.000	105.2	72.5	66.8	92.0
Jacksonville		FL		175.4	BMLH20120611ABN	81 34 13.0	302	308	Citicasters Licenses, Inc.		
260A	WXJB	LIC	CX	272.5	99.54	28 38 28.0	2.300	2.4	27.1	83.3	71.4
Homosassa		FL		92.0	BLH20100629AMS	82 26 14.0	163	181	George S. Flinn, Jr.		

Terrain database is USGS 03 SEC, R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM  
Contour distances are on direct line to and from reference station. Reference Zone= East Zone, Co to 3rd adjacent.

All separation margins (if shown) include rounding.

Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)  
"\*"affixed to 'IN' or 'OUT' values = site inside restricted contour.

< = Station meets FCC minimum distance spacing for its class.

< = Contour Overlap

Reference station has protected zone issue: AM tower

Table 2

**Contour Protection "FM Over" Report****RE: WLRQ-FM****Manuel E. Arroyo**

W268BW Orlando, FL

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01-28-2016      Terrain Data: USGS 03 SEC      FMOver Analysis

WLRQ-FM BLH19910122KC

Proposed Translator

Channel = 257C2  
Max ERP = 50 kW  
RCAMSL = 151 m  
N. Lat. 28 16 42.0  
W. Lng. 80 42 03.0  
Protected  
60 dBu

Channel = 257D  
Max ERP = 0.25 kW  
RCAMSL = 148 m  
N. Lat. 28 36 20.0  
W. Lng. 81 25 05.0  
Interfering  
40 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
238.0	050.0000	0145.7	051.6	157.4	000.1955	0116.9	069.1	31.05	
239.0	050.0000	0145.7	051.6	157.5	000.1978	0117.0	068.2	31.38	
240.0	050.0000	0145.8	051.6	157.6	000.2000	0117.0	067.3	31.70	
241.0	050.0000	0145.8	051.6	157.7	000.2020	0117.0	066.4	32.03	
242.0	050.0000	0145.8	051.6	157.8	000.2038	0117.0	065.5	32.35	
243.0	050.0000	0145.8	051.6	157.9	000.2053	0117.0	064.6	32.66	
244.0	050.0000	0145.8	051.6	157.9	000.2066	0117.0	063.8	32.98	
245.0	050.0000	0145.9	051.6	158.0	000.2078	0117.0	062.9	33.31	
246.0	050.0000	0145.9	051.6	158.0	000.2087	0117.0	062.0	33.63	
247.0	050.0000	0146.0	051.7	158.1	000.2094	0117.0	061.1	33.96	
248.0	050.0000	0146.0	051.7	158.1	000.2098	0117.0	060.2	34.29	
249.0	050.0000	0146.1	051.7	158.1	000.2100	0117.0	059.2	34.62	
250.0	050.0000	0146.1	051.7	158.1	000.2097	0117.0	058.3	34.95	
251.0	050.0000	0146.2	051.7	158.1	000.2093	0117.0	057.4	35.28	
252.0	050.0000	0146.2	051.7	158.0	000.2084	0117.0	056.5	35.60	
253.0	050.0000	0146.2	051.7	158.0	000.2072	0117.0	055.6	35.92	
254.0	050.0000	0146.3	051.7	157.9	000.2055	0117.0	054.7	36.23	
255.0	050.0000	0146.3	051.7	157.8	000.2036	0117.0	053.8	36.54	
256.0	050.0000	0146.3	051.7	157.7	000.2012	0117.0	053.0	36.83	
257.0	050.0000	0146.3	051.7	157.5	000.1983	0117.0	052.1	37.12	
258.0	050.0000	0146.3	051.7	157.3	000.1951	0116.9	051.2	37.40	
259.0	050.0000	0146.3	051.7	157.1	000.1915	0116.9	050.3	37.66	
260.0	050.0000	0146.3	051.7	156.9	000.1875	0116.9	049.4	37.91	
261.0	050.0000	0146.3	051.7	156.7	000.1828	0116.9	048.5	38.14	
262.0	050.0000	0146.4	051.7	156.4	000.1778	0116.8	047.7	38.36	
263.0	050.0000	0146.4	051.7	156.1	000.1723	0116.8	046.8	38.56	
264.0	050.0000	0146.3	051.7	155.8	000.1663	0116.8	045.9	38.75	
265.0	050.0000	0146.3	051.7	155.4	000.1598	0116.8	045.1	38.92	
266.0	050.0000	0146.3	051.7	155.0	000.1530	0116.8	044.2	39.07	
267.0	050.0000	0146.3	051.7	154.6	000.1456	0116.8	043.4	39.21	
268.0	050.0000	0146.3	051.7	154.1	000.1377	0116.8	042.6	39.32	
269.0	050.0000	0146.2	051.7	153.6	000.1294	0116.9	041.7	39.39	
270.0	050.0000	0146.1	051.7	153.0	000.1208	0116.9	040.9	39.44	
271.0	050.0000	0146.1	051.7	152.5	000.1121	0116.9	040.1	39.47	
272.0	050.0000	0146.1	051.7	151.8	000.1031	0117.0	039.3	39.45	
273.0	050.0000	0146.1	051.7	151.1	000.0937	0117.0	038.6	39.39	
274.0	050.0000	0146.0	051.7	150.4	000.0842	0117.0	037.8	39.26	
275.0	050.0000	0146.0	051.7	149.6	000.0775	0116.9	037.1	39.24	
276.0	050.0000	0146.0	051.7	148.8	000.0743	0116.8	036.3	39.39	

Table 2

**Contour Protection "FM Over" Report****RE: WLRQ-FM****Manuel E. Arroyo**

W268BW Orlando, FL

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Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
277.0	050.0000	0146.0	051.7	147.9	000.0710	0116.7	035.6	39.51	
278.0	050.0000	0146.0	051.7	147.0	000.0675	0116.6	034.9	39.61	
279.0	050.0000	0145.9	051.7	146.0	000.0640	0116.3	034.3	39.68	
280.0	050.0000	0146.0	051.7	144.9	000.0603	0116.0	033.6	39.71	
281.0	050.0000	0146.0	051.7	143.8	000.0566	0115.8	033.0	39.72	
282.0	050.0000	0146.0	051.7	142.7	000.0527	0115.6	032.4	39.70	
283.0	050.0000	0146.0	051.7	141.4	000.0488	0115.4	031.8	39.65	
284.0	050.0000	0146.2	051.7	140.2	000.0450	0115.1	031.2	39.56	
285.0	050.0000	0146.2	051.7	138.8	000.0428	0115.0	030.7	39.61	
286.0	050.0000	0146.3	051.7	137.4	000.0409	0115.0	030.2	39.70	
287.0	050.0000	0146.4	051.7	135.9	000.0389	0115.0	029.7	39.74	
288.0	050.0000	0146.5	051.7	134.4	000.0369	0114.9	029.3	39.76	
289.0	050.0000	0146.5	051.7	132.8	000.0348	0115.0	028.9	39.74	
290.0	050.0000	0146.5	051.7	131.1	000.0329	0115.2	028.6	39.72	
291.0	050.0000	0146.5	051.7	129.4	000.0313	0115.7	028.2	39.73	
292.0	050.0000	0146.5	051.7	127.6	000.0307	0116.0	028.0	39.83	
293.0	050.0000	0146.4	051.7	125.8	000.0300	0116.0	027.7	39.89	
294.0	050.0000	0146.5	051.7	124.0	000.0294	0116.1	027.6	39.92	
295.0	050.0000	0146.5	051.7	122.1	000.0288	0116.2	027.4	39.92	
296.0	050.0000	0146.5	051.7	120.3	000.0281	0116.6	027.3	39.91	
297.0	050.0000	0146.4	051.7	118.4	000.0275	0117.1	027.3	39.88	
298.0	050.0000	0146.5	051.7	116.5	000.0267	0117.4	027.3	39.79	
299.0	050.0000	0146.5	051.7	114.6	000.0264	0117.6	027.3	39.71	
300.0	050.0000	0146.5	051.7	112.7	000.0270	0117.7	027.4	39.77	
301.0	050.0000	0146.5	051.7	110.8	000.0278	0118.0	027.5	39.83	
302.0	050.0000	0146.5	051.7	109.0	000.0284	0119.4	027.7	39.91	
303.0	050.0000	0146.5	051.7	107.2	000.0290	0120.1	027.9	39.91	
304.0	050.0000	0146.5	051.7	105.4	000.0296	0120.5	028.2	39.86	
305.0	050.0000	0146.4	051.7	103.7	000.0302	0120.8	028.5	39.77	
306.0	050.0000	0146.2	051.7	102.1	000.0308	0121.2	028.9	39.66	
307.0	050.0000	0146.0	051.7	100.5	000.0313	0121.6	029.3	39.52	
308.0	050.0000	0145.9	051.6	098.9	000.0332	0122.0	029.7	39.55	
309.0	050.0000	0145.9	051.6	097.4	000.0358	0121.7	030.1	39.61	
310.0	050.0000	0145.9	051.6	096.0	000.0384	0122.1	030.6	39.66	
311.0	050.0000	0145.8	051.6	094.7	000.0408	0122.5	031.2	39.67	
312.0	050.0000	0145.8	051.6	093.4	000.0432	0123.2	031.7	39.68	
313.0	050.0000	0145.8	051.6	092.1	000.0458	0123.7	032.3	39.68	
314.0	050.0000	0145.8	051.6	090.9	000.0481	0124.0	032.9	39.61	
315.0	050.0000	0145.7	051.6	089.8	000.0507	0124.3	033.5	39.55	
316.0	050.0000	0145.5	051.6	088.8	000.0551	0124.5	034.2	39.60	
317.0	050.0000	0145.5	051.6	087.8	000.0595	0124.8	034.8	39.63	
318.0	050.0000	0145.4	051.6	086.9	000.0637	0125.0	035.5	39.61	
319.0	050.0000	0145.2	051.5	086.0	000.0678	0125.2	036.3	39.55	
320.0	050.0000	0145.1	051.5	085.2	000.0718	0125.5	037.0	39.47	
321.0	050.0000	0145.1	051.5	084.4	000.0756	0125.8	037.7	39.37	
322.0	050.0000	0145.1	051.5	083.7	000.0794	0125.9	038.5	39.25	
323.0	050.0000	0145.1	051.5	083.0	000.0831	0126.0	039.3	39.10	
324.0	050.0000	0145.1	051.5	082.3	000.0864	0126.1	040.0	38.92	
325.0	050.0000	0145.1	051.5	081.7	000.0897	0126.1	040.8	38.74	
326.0	050.0000	0145.0	051.5	081.2	000.0928	0126.2	041.6	38.54	
327.0	050.0000	0145.0	051.5	080.7	000.0957	0126.3	042.5	38.32	
328.0	050.0000	0144.8	051.5	080.3	000.0981	0126.5	043.3	38.08	

Table 2

**Contour Protection "FM Over" Report****RE: WLRQ-FM****Manuel E. Arroyo**

W268BW Orlando, FL

(page 3 of 3)

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
329.0	050.0000	0144.8	051.5	079.8	000.1017	0126.6	044.1	37.90	
330.0	050.0000	0144.7	051.5	079.4	000.1064	0126.8	045.0	37.75	
331.0	050.0000	0144.7	051.5	079.0	000.1110	0126.9	045.8	37.59	
332.0	050.0000	0144.7	051.5	078.7	000.1151	0127.0	046.7	37.41	
333.0	050.0000	0144.7	051.5	078.4	000.1190	0127.0	047.5	37.22	
334.0	050.0000	0144.7	051.5	078.1	000.1226	0127.0	048.4	37.01	
335.0	050.0000	0144.7	051.5	077.9	000.1259	0127.0	049.3	36.78	
336.0	050.0000	0144.7	051.5	077.6	000.1290	0127.0	050.2	36.54	
337.0	050.0000	0144.7	051.5	077.4	000.1316	0127.0	051.0	36.29	
338.0	050.0000	0144.7	051.5	077.3	000.1341	0127.0	051.9	36.02	
339.0	050.0000	0144.7	051.5	077.1	000.1362	0127.0	052.8	35.74	
340.0	050.0000	0144.9	051.5	076.9	000.1384	0127.0	053.7	35.47	
341.0	050.0000	0146.1	051.7	076.7	000.1421	0127.0	054.6	35.25	
342.0	050.0000	0148.7	052.0	076.2	000.1485	0127.0	055.4	35.10	
343.0	050.0000	0149.8	052.2	076.0	000.1516	0127.0	056.3	34.85	
344.0	050.0000	0150.3	052.2	075.9	000.1532	0127.0	057.3	34.55	
345.0	050.0000	0150.5	052.3	075.8	000.1541	0127.0	058.2	34.24	
346.0	050.0000	0150.7	052.3	075.8	000.1545	0127.0	059.1	33.91	
347.0	050.0000	0150.8	052.3	075.8	000.1546	0127.0	060.0	33.58	
348.0	050.0000	0150.9	052.3	075.8	000.1545	0127.0	060.9	33.25	
349.0	050.0000	0150.9	052.3	075.8	000.1540	0127.0	061.8	32.92	
350.0	050.0000	0150.9	052.3	075.9	000.1534	0127.0	062.7	32.58	
351.0	050.0000	0151.0	052.3	075.9	000.1526	0127.0	063.6	32.25	
352.0	050.0000	0151.0	052.3	076.0	000.1515	0127.0	064.5	31.93	
353.0	050.0000	0150.8	052.3	076.1	000.1500	0127.0	065.5	31.59	
354.0	050.0000	0150.4	052.2	076.3	000.1480	0127.0	066.4	31.24	
355.0	050.0000	0149.8	052.2	076.4	000.1456	0127.0	067.2	30.89	
356.0	050.0000	0149.1	052.1	076.6	000.1428	0127.0	068.1	30.52	
357.0	050.0000	0148.4	052.0	076.8	000.1400	0127.0	069.0	30.16	

Table 3

**Contour Protection "FM Over" Report****RE: W257BF****Manuel E. Arroyo**

W268BW Orlando, FL

(page 1 of 3)



01-28-2016      Terrain Data: USGS 03 SEC      FMOver Analysis

W257BF    BLFT19980828TC

Proposed Translator

Channel = 257D  
Max ERP = 0.055 kW  
RCAMSL = 86 m  
N. Lat. 28 48 47.0  
W. Lng. 81 51 27.0  
Protected  
60 dBu

Channel = 257D  
Max ERP = 0.25 kW  
RCAMSL = 148 m  
N. Lat. 28 36 20.0  
W. Lng. 81 25 05.0  
Interfering  
40 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
058.0	000.0550	0061.2	006.9	305.9	000.1898	0114.1	045.6	39.27	
059.0	000.0550	0061.4	006.9	305.9	000.1892	0114.2	045.5	39.30	
060.0	000.0550	0061.4	006.9	305.8	000.1883	0114.2	045.4	39.33	
061.0	000.0550	0061.3	006.9	305.8	000.1874	0114.2	045.3	39.35	
062.0	000.0550	0061.8	006.9	305.7	000.1868	0114.2	045.2	39.39	
063.0	000.0550	0062.4	007.0	305.7	000.1863	0114.3	045.1	39.43	
064.0	000.0550	0062.8	007.0	305.6	000.1856	0114.3	044.9	39.46	
065.0	000.0550	0063.0	007.0	305.6	000.1847	0114.3	044.8	39.49	
066.0	000.0550	0063.0	007.0	305.5	000.1837	0114.4	044.7	39.51	
067.0	000.0550	0063.1	007.0	305.4	000.1826	0114.4	044.6	39.53	
068.0	000.0550	0063.2	007.0	305.3	000.1815	0114.4	044.5	39.55	
069.0	000.0550	0063.3	007.0	305.3	000.1804	0114.5	044.4	39.57	
070.0	000.0550	0063.4	007.0	305.2	000.1793	0114.5	044.3	39.58	
071.0	000.0550	0063.7	007.0	305.1	000.1783	0114.6	044.2	39.61	
072.0	000.0550	0064.1	007.1	305.0	000.1773	0114.6	044.1	39.63	
073.0	000.0550	0064.4	007.1	305.0	000.1762	0114.7	044.0	39.65	
074.0	000.0550	0064.6	007.1	304.9	000.1751	0114.7	043.9	39.67	
075.0	000.0550	0064.8	007.1	304.8	000.1739	0114.8	043.8	39.69	
076.0	000.0550	0064.8	007.1	304.7	000.1726	0114.9	043.7	39.70	
077.0	000.0550	0064.9	007.1	304.6	000.1713	0114.9	043.6	39.71	
078.0	000.0550	0064.9	007.1	304.4	000.1699	0115.0	043.5	39.71	
079.0	000.0550	0064.8	007.1	304.3	000.1685	0115.0	043.4	39.72	
080.0	000.0550	0064.4	007.1	304.2	000.1668	0115.1	043.3	39.71	
081.0	000.0550	0064.2	007.1	304.1	000.1652	0115.1	043.3	39.70	
082.0	000.0550	0063.8	007.0	303.9	000.1635	0115.2	043.2	39.69	
083.0	000.0550	0063.4	007.0	303.8	000.1617	0115.3	043.1	39.67	
084.0	000.0550	0063.3	007.0	303.7	000.1601	0115.3	043.0	39.66	
085.0	000.0550	0063.3	007.0	303.5	000.1585	0115.4	043.0	39.65	
086.0	000.0550	0063.2	007.0	303.4	000.1569	0115.4	042.9	39.64	
087.0	000.0550	0063.6	007.0	303.3	000.1555	0115.4	042.8	39.64	
088.0	000.0550	0063.9	007.0	303.2	000.1540	0115.5	042.7	39.64	
089.0	000.0550	0064.1	007.1	303.0	000.1524	0115.5	042.6	39.63	
090.0	000.0550	0064.2	007.1	302.9	000.1509	0115.6	042.6	39.62	
091.0	000.0550	0064.3	007.1	302.8	000.1493	0115.6	042.5	39.60	
092.0	000.0550	0064.8	007.1	302.6	000.1478	0115.6	042.4	39.60	
093.0	000.0550	0065.0	007.1	302.5	000.1463	0115.6	042.3	39.58	
094.0	000.0550	0065.3	007.1	302.4	000.1447	0115.7	042.3	39.57	
095.0	000.0550	0065.4	007.1	302.2	000.1430	0115.7	042.2	39.55	
096.0	000.0550	0065.6	007.1	302.1	000.1414	0115.8	042.1	39.53	

Table 3

**Contour Protection "FM Over" Report****RE: W257BF****Manuel E. Arroyo**

W268BW Orlando, FL

(page 2 of 3)

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
097.0	000.0550	0066.0	007.2	301.9	000.1406	0115.9	042.1	39.55	
098.0	000.0550	0066.1	007.2	301.8	000.1406	0116.0	042.0	39.58	
099.0	000.0550	0066.2	007.2	301.6	000.1406	0116.1	042.0	39.61	
100.0	000.0550	0066.2	007.2	301.5	000.1406	0116.2	041.9	39.63	
101.0	000.0550	0066.3	007.2	301.3	000.1406	0116.3	041.9	39.66	
102.0	000.0550	0066.3	007.2	301.1	000.1406	0116.4	041.8	39.68	
103.0	000.0550	0066.3	007.2	301.0	000.1406	0116.5	041.8	39.71	
104.0	000.0550	0066.0	007.2	300.8	000.1406	0116.6	041.8	39.72	
105.0	000.0550	0065.6	007.1	300.6	000.1406	0116.7	041.8	39.74	
106.0	000.0550	0064.8	007.1	300.5	000.1406	0116.8	041.8	39.74	
107.0	000.0550	0063.9	007.0	300.3	000.1406	0116.9	041.8	39.74	
108.0	000.0550	0063.6	007.0	300.1	000.1406	0117.0	041.8	39.75	
109.0	000.0550	0063.3	007.0	299.9	000.1406	0117.0	041.8	39.75	
110.0	000.0550	0062.8	007.0	299.8	000.1406	0117.1	041.8	39.75	
111.0	000.0550	0062.5	007.0	299.6	000.1406	0117.1	041.8	39.76	
112.0	000.0550	0062.3	007.0	299.4	000.1406	0117.0	041.8	39.76	
113.0	000.0550	0061.7	006.9	299.3	000.1406	0117.0	041.8	39.74	
114.0	000.0550	0061.5	006.9	299.1	000.1406	0116.9	041.8	39.74	
115.0	000.0550	0061.8	006.9	298.9	000.1406	0116.8	041.7	39.75	
116.0	000.0550	0062.4	007.0	298.8	000.1406	0116.8	041.7	39.76	
117.0	000.0550	0062.9	007.0	298.6	000.1406	0116.7	041.7	39.77	
118.0	000.0550	0063.0	007.0	298.4	000.1406	0116.7	041.7	39.77	
119.0	000.0550	0063.0	007.0	298.3	000.1406	0116.7	041.7	39.77	
120.0	000.0550	0063.1	007.0	298.1	000.1406	0116.7	041.7	39.77	
121.0	000.0550	0063.3	007.0	297.9	000.1406	0116.6	041.7	39.77	
122.0	000.0550	0063.4	007.0	297.8	000.1406	0116.6	041.7	39.77	
123.0	000.0550	0063.9	007.0	297.6	000.1406	0116.7	041.7	39.78	
124.0	000.0550	0064.3	007.1	297.4	000.1406	0116.8	041.6	39.79	
125.0	000.0550	0064.8	007.1	297.2	000.1406	0116.9	041.6	39.80	
126.0	000.0550	0065.1	007.1	297.1	000.1406	0117.0	041.6	39.80	
127.0	000.0550	0065.6	007.1	296.9	000.1406	0117.1	041.6	39.81	
128.0	000.0550	0065.8	007.1	296.7	000.1406	0117.1	041.6	39.81	
129.0	000.0550	0066.0	007.2	296.6	000.1406	0117.1	041.7	39.80	
130.0	000.0550	0066.2	007.2	296.4	000.1406	0117.2	041.7	39.80	
131.0	000.0550	0066.2	007.2	296.2	000.1406	0117.2	041.7	39.79	
132.0	000.0550	0066.2	007.2	296.1	000.1406	0117.3	041.7	39.77	
133.0	000.0550	0066.0	007.2	295.9	000.1406	0117.3	041.8	39.76	
134.0	000.0550	0066.2	007.2	295.7	000.1406	0117.3	041.8	39.74	
135.0	000.0550	0066.5	007.2	295.6	000.1406	0117.3	041.8	39.73	
136.0	000.0550	0066.7	007.2	295.4	000.1406	0117.3	041.9	39.72	
137.0	000.0550	0066.6	007.2	295.2	000.1406	0117.3	041.9	39.70	
138.0	000.0550	0065.9	007.2	295.1	000.1406	0117.4	042.0	39.67	
139.0	000.0550	0065.4	007.1	295.0	000.1411	0117.4	042.1	39.65	
140.0	000.0550	0064.6	007.1	294.8	000.1425	0117.4	042.2	39.66	
141.0	000.0550	0063.4	007.0	294.7	000.1436	0117.5	042.3	39.65	
142.0	000.0550	0063.0	007.0	294.6	000.1451	0117.5	042.4	39.66	
143.0	000.0550	0062.5	007.0	294.5	000.1464	0117.6	042.4	39.67	
144.0	000.0550	0061.4	006.9	294.3	000.1476	0117.6	042.5	39.67	
145.0	000.0550	0061.1	006.9	294.2	000.1490	0117.7	042.6	39.68	
146.0	000.0550	0060.7	006.9	294.1	000.1503	0117.7	042.7	39.68	
147.0	000.0550	0060.2	006.9	294.0	000.1516	0117.7	042.8	39.68	
148.0	000.0550	0059.4	006.8	293.9	000.1527	0117.7	042.9	39.67	

Table 3

**Contour Protection "FM Over" Report****RE: W257BF****Manuel E. Arroyo**

W268BW Orlando, FL

(page 3 of 3)

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
149.0	000.0550	0059.9	006.8	293.7	000.1543	0117.7	042.9	39.70	
150.0	000.0550	0060.1	006.8	293.6	000.1559	0117.7	043.0	39.72	
151.0	000.0550	0060.1	006.8	293.5	000.1573	0117.7	043.1	39.73	
152.0	000.0550	0060.1	006.9	293.3	000.1587	0117.7	043.1	39.73	
153.0	000.0550	0059.6	006.8	293.2	000.1598	0117.7	043.2	39.73	
154.0	000.0550	0059.2	006.8	293.1	000.1609	0117.7	043.3	39.72	
155.0	000.0550	0059.1	006.8	293.0	000.1622	0117.8	043.4	39.72	
156.0	000.0550	0059.4	006.8	292.9	000.1637	0117.8	043.5	39.73	
157.0	000.0550	0059.6	006.8	292.8	000.1651	0117.8	043.6	39.74	
158.0	000.0550	0059.7	006.8	292.7	000.1665	0117.8	043.6	39.74	
159.0	000.0550	0059.5	006.8	292.6	000.1677	0117.8	043.7	39.73	
160.0	000.0550	0058.8	006.8	292.5	000.1685	0117.8	043.8	39.71	
161.0	000.0550	0057.7	006.7	292.4	000.1690	0117.9	044.0	39.67	
162.0	000.0550	0057.2	006.7	292.4	000.1699	0117.9	044.1	39.65	
163.0	000.0550	0056.4	006.6	292.3	000.1704	0117.9	044.2	39.62	
164.0	000.0550	0055.6	006.6	292.3	000.1710	0117.9	044.3	39.58	
165.0	000.0550	0055.2	006.6	292.2	000.1717	0118.0	044.4	39.56	
166.0	000.0550	0055.2	006.6	292.1	000.1728	0118.0	044.5	39.55	
167.0	000.0550	0053.4	006.5	292.2	000.1724	0118.0	044.7	39.48	
168.0	000.0550	0052.2	006.4	292.2	000.1725	0118.0	044.8	39.42	
169.0	000.0550	0052.6	006.4	292.0	000.1737	0118.0	044.9	39.42	
170.0	000.0550	0053.7	006.5	291.9	000.1755	0118.1	045.0	39.45	
171.0	000.0550	0055.5	006.6	291.7	000.1778	0118.1	045.0	39.49	
172.0	000.0550	0056.8	006.7	291.5	000.1797	0118.1	045.1	39.51	
173.0	000.0550	0057.5	006.7	291.4	000.1811	0118.1	045.1	39.51	
174.0	000.0550	0057.4	006.7	291.4	000.1818	0118.1	045.2	39.49	
175.0	000.0550	0056.5	006.7	291.4	000.1819	0118.1	045.4	39.44	
176.0	000.0550	0056.0	006.6	291.3	000.1822	0118.1	045.5	39.40	
177.0	000.0550	0055.9	006.6	291.3	000.1829	0118.2	045.6	39.37	



**SECTION III - PREPARER'S CERTIFICATION**

I certify that I have prepared Section III (Engineering Data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name JOSEPH M. DAVIS, P.E.		Relationship to Applicant (e.g., Consulting Engineer) CONSULTING ENGINEER			
Signature		Date 1/28/2016			
Mailing Address CHESAPEAKE RF CONSULTANTS, LLC 207 OLD DOMINION ROAD					
City YORKTOWN		State or Country (if foreign address) VA		Zip Code 23692 -	
Telephone Number (include area code) 7036509600		E-Mail Address (if available) JOSEPH.DAVIS@RF-CONSULTANTS.COM			

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).

**Section III-A - Engineering****TECHNICAL SPECIFICATIONS**

Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.

**TECH BOX**

1.	Channel: 257											
2.	Primary Station:											
	Facility ID Number		Call Sign		City				State			
	21759		WRMQ		ORLANDO				FL			
3.	Delivery Method (Select One): <input type="radio"/> Off-air <input type="radio"/> Microwave <input type="radio"/> Satellite <input type="radio"/> Via <input checked="" type="radio"/> Other											
4.	Antenna Location Coordinates: (NAD 27)  Latitude: Degrees 28 Minutes 36 Seconds 20 <input checked="" type="radio"/> North <input type="radio"/> South  Longitude: Degrees 81 Minutes 25 Seconds 5 <input checked="" type="radio"/> West <input type="radio"/> East											
5.	Antenna Structure Registration Number: 1244200 <input type="checkbox"/> Not Applicable <input type="checkbox"/> Notification filed with FAA											
6.	Antenna Location Site Elevation Above Mean Sea Level:								29 meters			
7.	Overall Tower Height Above Ground Level:								152 meters			
8.	Height of Radiation Center Above Ground Level:								119 meters(H) 119 meters(V)			
9.	Effective Radiated Power:								0.25 kW(H) 0.25 kW(V)			
10.	Transmitting Antenna:  Before selecting Directional "Off-the-Shelf", refer to "Search for Antenna Information" under <a href="http://licensing.fcc.gov/prod/cdbs/pubacc/prod/cdbs_pa.htm">CDBS Public Access</a> (http://licensing.fcc.gov/prod/cdbs/pubacc/prod/cdbs_pa.htm). Make sure that the Standard Pattern is marked Yes and that the relative field values shown match your values. Enter the Manufacturer (Make) and Model exactly as displayed in the Antenna Search.  <input type="radio"/> Nondirectional <input type="radio"/> Directional Off-the Shelf <input checked="" type="radio"/> Directional composite  Manufacturer SWR Model FMEC/1-TA Rotation:degrees <input checked="" type="checkbox"/> No Rotation											
	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value
	0	1	10	1	20	1	30	1	40	1	50	1
	60	1	70	1	80	0.631	90	0.447	100	0.355	110	0.335
	120	0.335	130	0.355	140	0.422	150	0.562	160	1	170	1
	180	1	190	1	200	1	210	1	220	1	230	1
	240	1	250	1	260	1	270	1	280	1	290	0.891
	300	0.75	310	1	320	1	330	1	340	1	350	1
	Additional Azimuths		115	0.324	285	1	295	0.75	302	0.750	305	0.841

[Relative Field Polar Plot](#)

11. For FM Boosters and Fill-in translators only.

	<p>a. <b>FM Fill-in translators.</b> Applicant certifies that the FM translator's (a) coverage contour does not extend beyond the protected contour of the commercial FM primary station to be rebroadcast, or (b) entire 60 dBu contour is contained within the lesser of: (i) the 2 mV/m daytime contour of the AM primary station to be rebroadcast, or (ii) a 25-mile radius centered at the AM primary station's transmitter site.</p> <p>b. <b>FM Boosters.</b> Applicant certifies that the FM Booster station's service contour is entirely within the primary station's protected coverage contour.</p>	<p><input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> N/A</p> <p>See Explanation in [Exhibit 10]</p> <p><input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> N/A</p> <p>See Explanation in [Exhibit 11]</p>
12.	<p><b>Interference.</b> The proposed facility complies with all of the following applicable rule sections. Check all that apply:</p> <p><b>Overlap Requirements.</b> <input checked="" type="checkbox"/> a) 47 C.F.R. Section 74.1204 <b>Exhibit Required.</b></p> <p><b>Television Channel 6 Protection.</b> <input type="checkbox"/> b) 47 C.F.R. Section 74.1205 with respect to station(s) <b>Exhibit Required.</b></p>	<p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> <p>See Explanation in [Exhibit 12]</p> <p>[Exhibit 13]</p> <p>[Exhibit 14]</p>
13.	<p><b>Unattended operation.</b> Applicant certifies that unattended operation is not proposed, or if this application proposes unattended operation, the applicant certifies that it will comply with the requirements of 47 C.F.R. Section 74.1234.</p>	<p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> <p>See Explanation in [Exhibit 15]</p>
14.	<p><b>Multiple Translators.</b> Applicant certifies that it does not have any interest in an application or an authorization for an FM translator station that serves substantially the same area and rebroadcasts the same signal as the proposed FM translator station.</p>	<p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> <p>See Explanation in [Exhibit 16]</p>
15.	<p><b>Environmental Protection Act.</b> Applicant certifies that the proposed facility is excluded from environmental processing under 47 C.F.R. Section 1.1306 (i.e., the facility will not have a significant environmental impact and complies with the maximum permissible radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments). Unless the applicant can determine compliance through the use of the RF worksheets in Appendix A, an <b>Exhibit is required.</b></p> <p>By checking "Yes" above, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.</p>	<p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> <p>See Explanation in [Exhibit 17]</p>